

*U.S. Antarctic Marine Living Resources Program*  
*2008-2009 Weekly Field Reports*  
*Cape Shirreff, Livingston Island*

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**Seabirds:**

1. Gentoo penguins in our reproduction study plots started to crèche this week. To date 54% of the nests have crèched, 28% are still brooding and 18% have failed. In the two weeks since peak chinstrap penguin hatch one of the chinstrap penguin reproduction nests has already crèched chicks, 73% are brooding chicks, 26% have failed.
2. We continue to monitor known age penguins that were banded here as chicks. Of the 37 known aged gentoo penguins that have nested 36% have crèched chicks 11% are brooding chicks and 52% have failed. All of the forty known aged chinstrap penguins have hatched or failed, 59% have hatched and 41% nests have failed.
3. The brown skuas continue to hatch this week. Of the 21 brown skua pairs that have initiated clutches 13 have hatched, 3 continue to incubate and 5 have failed.
4. We have successfully recovered 10 Time Depth Recorders (TDRs) and 10 satellite tags (PTTs) that were deployed on nesting chinstraps adults last week. We are in the process of deploying 10 TDRs and 10 PTTs on gentoo penguins with crèched chicks and 4 TDRs and 6 PTTs on nesting chinstraps.
5. On 6 January we began diet sampling and collected samples from five nesting chinstrap penguins using the wet offloading technique. Data on total mass of stomach contents, diet



composition, and length and sex frequency of krill were recorded for each sample. To date, we have collected 10 diet samples from chinstraps and 5 from gentoos. Chinstrap diet samples have consisted almost entirely of Antarctic krill (*Euphausia superba*) with trace amounts of fish. Gentoo samples were a mix of Antarctic krill and fish. To date, we have only found otoliths from the species *Pleurogramma antarcticum*.

### Pinnipeds:

6. Our five GPS/Time depth recorder females for monitoring foraging range and behavior continue to collect data. We have collected data on 28 foraging trips.
7. All but seven of our 29 CCAMLR attendance females has completed six trips to sea. This week, two attendance females lost their pups, most likely to leopard seal predation. In total six of the 29 females have lost their pups. This is four more than the same time last year. Predation by leopard seals appears to be higher this year. We have also recorded more leopard seals than in the past. We regularly have seven leopard seals hauling out at the same time on one of our study beaches.
8. Mean trip duration is shorter than in years past and indicate better than average foraging conditions for 2008/09. Trip durations are as follows: first trip: 2.8d (s.d.=1.2, n=29), second trip 2.6d (s.d.=1.1, n=29), third trip 2.7d (s.d.=0.8, n=29), fourth trip 2.5d (s.d.=0.9, n=27), fifth trip 3.3d (s.d.=1.0, n=24), sixth trip 3.2 d (s.d.=0.6, n=14).
9. All the pups of the 22 females that have completed six trips to sea have been weighed according to protocol.



10. This is the first week we did not have any tagged adult females arrive on our study beaches that we have not previously seen this season. Daily tag re-sight censuses for adult females indicate an 83.0 % return rate from last year (compared to 84.5 % for adult females in 2006/07). Natality for adult tagged females was also 83.0% compared to 84.9%% last year. We now have 81.5% of all the pups of tagged females sexed and we have collected DNA samples from 111 pups of tagged females.
11. Fur seal diet protocol requires collecting 10 scats each week for analysis of fish bones, squid beaks, and krill carapaces. This week we collected our fourth sample. To date 40 scats have been collected. All samples collected have been predominantly krill.
12. We have re-sighted 103 fur seals tagged as pups in previous years. Younger animals are appearing all over the cape and this week we have seen 10 new fur seals tagged as pups. Just this morning we saw our first tagged yearling.
13. We recovered two over-winter i-bKrill tags that measure water temperature every minute for the entire year. One of the tags was recovered from a two year old and the other from the first tagged yearling of the season. The tags are inexpensive and can tell us generally whether young of the year remain in the Antarctic or just how far they do range in their first year.
14. We have been conducting a daily census of elephant seal wallows and haulouts. We have recorded the arrival of our first elephant seal deployed with a CTD-PTT instrument last year.



Unfortunately it returned without the instrument. We also recorded the arrival of a seal from the Falkland Islands. It had three tags on its flippers. We will continue to do daily searches and VHF receiver checks for returning elephant seals and hopefully recover some instruments deployed last year.

15. Leopard seals continue to arrive. Seven have been seen hauling out on one beach within our study site. This is the most we have ever observed hauling out at the same time together. To date we have captured three. All three received a VHF transmitter to record hauling out patterns. In addition, one also received a time-depth-recorder. They will begin molting in late-January but we hope to get a month or more of data.

### Weather:

16. This week we have had favorable conditions with little wind or precipitation. Overall for the week, the winds averaged 10.8 mph with 31 mph as the highest recorded. This has been the first week that winds have not been predominantly from the west. Approximately 40% of the wind measures indicated east winds, 40% were west and 20% northerly. Precipitation for the week was 0.2 inches bringing the season total to 2.00 inches. The average temperature was 2.9 degrees Celsius with a high of 8.3 and a low of 0.7 degrees.

### Camp:



17. Today we are looking forward to the arrival of the R/V *Yuzhmorgeologia* with fresh supplies, mail, and a visit with the staff

aboard. It will be great to see everyone, have mail and news, and fresh salad fixings will be much appreciated.

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*Submitted by AMLR staff currently residing at the Cape Shirreff field station, Livingston Island.*

